ABSTRACT

A method and system for decoding symbols of variable length in a digital video bit stream in real time, using Very Long Instruction Word (VLIW) architecture. One embodiment of the present invention first reads several bit sections from a bit stream. The bit stream comprises digital video information and is made up of a series of encoded symbols of varying length. While the first bit section will correspond to a valid symbol in the bit-stream, the rest of the bit sections may or may not, depending on the length of the first section. The next step of this embodiment is indexing a table of variable length codes to obtain a look-up result for each of the read-in bit sections. This is done in parallel for all sections. Next, this embodiment of the present invention determines whether each of the look-up results is valid. A valid look-up result provides the length of the symbol. Next, the valid look-up values are accepted. In another embodiment of the present invention, an additional step is performed of advancing the bit stream by the sum of all accepted look-up results and reading more bit sections. In another embodiment, by utilizing parallel hardware resources, one software loop can decode multiple blocks of a bit stream at the same time because the starting point of each block is known in advance.